



Powerwave Coverage Solutions

Ameristar Casino

Powerwave Connects Guests and Staff at Ameristar Casino in St. Charles, MO

The Customer

As the official first capitol of Missouri, St. Charles has a wealth of attractions for visitors to enjoy. The newest and largest addition to the St. Charles community is the all-new Ameristar St. Charles Casino, a wholly owned subsidiary of Ameristar Casinos, Inc. (Nasdaq-NMS: ASCA). This innovative, Las Vegas-based gaming entertainment company is known for its distinctive quality conscious hotel casinos, and value orientation. The organization's roots go back nearly five decades to a tiny roadside casino in the high plateau country that borders Idaho and Nevada. Publicly held since November 1993, today the corporation owns and operates six properties in Nevada, Missouri, Iowa and Mississippi.

The Challenge

Established in 1994, Ameristar Casino St. Charles (Ameristar for short) unveiled its all-new \$360 million gaming and entertainment destination on August 6, 2002, replacing its original riverboat casino. The new 750,000 square foot casino complex is comprised of three structures - a land-based entertainment complex and two gaming vessels. Inside the main entertainment complex guests are greeted by the dramatic cobblestone streetscape inspired by the 1880 architecture of the St. Charles River Port District and can enjoy seven dining and entertainment venues. The streetscape adjoins with two gaming vessels on the banks of the Missouri River, which offer the largest and latest state-of-the-art selection of gaming options in the region. To further differentiate its hotel products and services, management at Ameristar sought to enhance wireless communication coverage throughout the new facility to enable guests and staff members to stay connected anytime, anywhere. The focus of such unprecedented service was to allow guests, using any assortment of wireless devices, the benefit of staying connected with business associates, friends and family while visiting. To better service in excess of 1 million visitors annually, management required that all 1,800 staff members have full access to their UHF portable two-way radios and/or paging devices for their critical day-to-day operations. However, like all traditional large-scale properties, wireless communications is problematic due to such physical barriers as concrete walls, steel trusses, and other materials that can be extremely hostile to RF signals.

The Wireless Service Provider

While the leading priority was to provide quality service and customer care by making wireless communication accessible to staff and guests, Ameristar wanted to ensure that they received a highly reliable, cost-effective inbuilding wireless coverage solution that would accommodate all their wireless communications needs. These included the support of their seven-channel duplex and simplex UHF two-way radio system used by security and maintenance personnel, as well as Arch Paging for employees equipped with one-way or two-way pagers. In addition, Ameristar wanted to provide guests with access to their wireless service provider of choice, such as AT&T™ Wireless, Sprint PCS™, Cingular™ and Arch Paging. In essence, Ameristar was seeking a solution that would allow them to converge all their wireless service needs onto a single platform to conserve on equipment and installation costs, as well as the aesthetics of the new facility. And with AT&T Wireless and Cingular having begun migrating capacity to GSM, they wanted to ensure that the platform would have the ability to accommodate future enhancements with minimal effort and expense. While many wireless technology vendors proposed a solution, only Powerwave Technologies had the capability to fulfill Ameristar's request.

The Solution

To offer complete coverage for all current and future wireless communication needs, Ameristar selected Powerwave because of their ability to provide full turnkey solutions and experience in resolving similar challenging environments. Selected to design, install and maintain a coverage extension system to enhance cellular, PCS, paging, and mobile radio services, Powerwave designed a solution based primarily on structural drawings because the new complex had yet to be built. What they ultimately proposed was a dual distributed antenna system to facilitate the conflicting performance requirements for extending coverage of Ameristar's simplex UHF two-way radio system and the remaining wireless services required. To extend cellular, PCS, paging and UHF coverage, Powerwave recommended their LinkNet™ Platform technology solution - the most flexible and scalable solution on the market today that can simultaneously manage various frequencies and service offerings under a single distributed antenna system. The solution includes a multiservice head-end repeater unit that consists of broadband and channelized service modules required to provide controlled signal amplification for each of the wireless services offered. Its modular design allows service modules to be easily added to keep pace with future enhancements or increase in user demand. Suggested for installation in the main entertainment complex, the head-end unit links to the donor site of each wireless service provider utilizing four directional antennas. The RF signals are received through an off-the-air interface, converged into a non-interfering RF source, and then converted to light by a fiber optic transceiver. Using single-mode fiber optic cable, the optical signal is carried to four remote LinkNet™ Satellite Units appropriately located throughout the casino complex to change the optical signal back to a noninterfering RF source and distribute to each area or floor via coaxial cable, Powerwave's patented Tap-In signal taps, and ceiling antennas for balanced coverage. To accommodate Ameristar's simplex UHF two-way radio system, Powerwave proposed a separate distributed antenna system to provide the TX/RX isolation necessary for simplex operation. Upon approval of the proposed designs, installation was completed easily and in time for Ameristar's grand opening. To further assist Ameristar, Powerwave also implemented their InView™ Management

System - a network monitoring and management system to monitor all active elements in both systems. Powerwave's Network Operating Center is in constant communication with these elements to provide real-time maintenance when required.

The Results

Powerwave's turnkey solutions for extending wireless coverage throughout Ameristar's new gaming and entertainment complex delivered a number of key benefits. They include the reduced infrastructure implementation costs and reduced number of antennas and components used as a result of LinkNet™ - Powerwave's multi-service wireless platform. More importantly, offering guests the convenience of staying connected on their assorted wireless devices anywhere on the premises, enhanced their experience at Ameristar Casino St. Charles. What's more, enabling staff members to communicate wirelessly with one another to perform their daily operations more effectively and efficiently, Ameristar was able to offer their guests the quality and value-added customer care services for which they are known for.

About Powerwave Technologies

A global leader in end-to-end wireless coverage and capacity solutions, Powerwave Technologies, Inc. offers cutting edge wireless infrastructure to address the demands of enterprise and commercial customers. Powerwave offers a comprehensive suite of solutions, including Antennas, Base Station Solutions and Coverage Solutions. Powerwave's product line supports all wireless network protocols and frequencies including Next Generation Networks in 4G technology such as WiMAX™ and LTE®. Powerwave solutions, products and services also help wireless operators and OEMs reduce capital and operating expenses, speed rollout of services, improve coverage and capacity, and reduce environmental impact. For more information, visit us at www.powerwave.com.



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